Chiropractic and Health

September 2009

DIABETES

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According to the most recent national estimates, **about 38.4 million people in the United States currently have diabetes**, which represents roughly **11.6 % of the U.S. population**. This total includes:

- **About 29.7 million diagnosed cases**, and
- **An estimated 8.7 million undiagnosed cases** (people who meet clinical criteria for diabetes but have not been diagnosed). CDC+1

These figures are based on data from the Centers for Disease Control and Prevention (CDC) and related national health statistics reports

Happy Reading!

Dr. Kinnison

WHAT IS DIABETES?

In medicine, the term *diabetes* refers to a group of metabolic disorders characterized by an increase in the concentration of sugar (or glucose) in the blood. The glucose that circulates in the blood is called *blood glucose* (glycemia).

Low Blood Glucose Levels	Normal Blood Glucose Levels	Abnormally High Blood Glucose Levels
Hypoglycemia	**Normalglycemia**	**Hyperglycemia**
In general, symptoms of low blood glucose begin to appear when blood sugar levels are at **55 mg/dl or lower**.	When fasting, blood glucose levels should be between **70 and 110 mg/dl**. The glucose level after the overnight fast is called **Fasting Blood Glucose** (Basal Glucose).	Above 110 mg/dl when fasting.

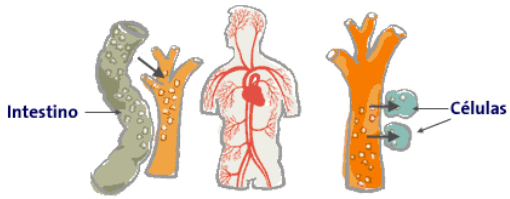
WHAT IS GLUCOSE USED FOR?

All the cells of the body need energy to stay active, maintain vital functions (such as the heartbeat, digestive movements, breathing…), as well as to regulate body temperature and enable muscle movement. Glucose is the main source of energy for the human body, just as gasoline is for keeping a car engine running.

Glucose enters the body through food. During digestion, a chain of chemical transformations takes place along the digestive tract, turning food into nutrients and then into smaller elements:

Food ⇨	Nutrient ⇨	Basic Element
Bread, rice, chickpeas…	Carbohydrates	Glucose

Food moves through the digestive tract and, upon reaching the small intestine, glucose passes into the blood.

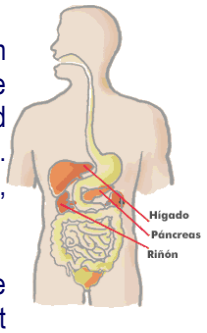


The blood is responsible for transporting glucose to the:

- **Liver (stored glucose)**
- **Brain and all the cells of the body**

To enter the cells and be used as energy, glucose requires the mediation of insulin. Insulin acts like a key that, when inserted into the lock, opens the door to the cells. The brain and nerve tissue cells are the only ones in the entire body that receive glucose directly from the bloodstream without the mediation of insulin. In this case, glucose is their only source of energy.

WHAT IS INSULIN FOR?



Insulin is a hormone of the digestive system whose mission is to allow the glucose circulating in the blood to enter the cells and be used as energy. Insulin is produced in the pancreas, specifically in the pancreatic beta cells.

The pancreas is a gland located behind the stomach, at the same level as the liver, but on the left side of the waist. When you start eating foods that contain carbohydrates, sensors are activated and the pancreas begins to produce insulin, which it releases directly into the blood.

For insulin to be effective, two conditions must be met:

1. That the pancreas secretes enough insulin

2. That the cells recognize it and allow its action.

The pancreas, among other substances, secretes insulin and also glucagon. Glucagon is another hormone that has the exact opposite effect of insulin. It is **hyperglycemic** (it raises blood glucose levels).

Types of Diabetes

In people with diabetes, one of two components of this system fails:

1. ***The pancreas does not produce insulin (Type I);***

2. ***The body's cells do not respond to the insulin that is produced (Type II).***

Type I, insulin-dependent, is sometimes called *juvenile diabetes* because it usually begins during childhood (although it can also occur in adults). Since the body does not produce insulin, people with Type I diabetes must inject insulin in order to live. Less than **10%** of people with diabetes have Type I.

In Type II, which develops in adults, the body does produce insulin but either not enough of it, or the body cannot properly use the insulin it produces. As a result, insulin cannot escort glucose into the cells. Type II diabetes most often occurs in people **over the age of forty**.

SYMPTOMS OF DIABETES

Hyperglycemia is painless, develops gradually, and often goes unnoticed in its early stages. Two types of situations may occur:

⇨ **sudden or acute hyperglycemia**

⇨ **or, sustained or chronic hyperglycemia**

Acute (sudden) hyperglycemia: In just a few days, blood glucose can reach values of **250 mg/dl or more**. After fasting and overnight rest, sometimes even much higher.
Symptoms or warning signs:

- **Frequent urge to urinate and very long urinations (polyuria)**
- **Excessive thirst (polydipsia)**
- **Excessive hunger (polyphagia)**
- **Fatigue**
- **Breath with an acetone odor (ketotic halitosis)**
- **Acetone odor in the urine**

When this occurs, high blood glucose levels, high glucosuria (presence of glucose in the urine), and high ketonuria (presence of acetone in the urine) are found. If high glucosuria and ketonuria persist, there is a significant risk of diabetic decompensation.

When **diabetic decompensation** sets in, nausea and vomiting appear, hunger is replaced by loss of appetite, and fatigue worsens. The smell of acetone is noticeable in the urine and in the vomit.
In some cases, this is the first sign that diabetes exists.

Chronic (sustained) hyperglycemia. When blood glucose levels remain permanently high—even if only "slightly high" and without ever having had a major "spike"—the blood vessels and the nerves responsible for sensation are slowly and progressively damaged. Over the years, clear signs of vascular disease (*vasculopathy*) and neurological disease (*neuropathy*) associated with diabetes appear.

A study explores the effects of Chiropractic on Diabetes

Diabetes is the fifth most common disease in the United States and is growing like an

epidemic throughout the world. Now, researchers are finding evidence that chiropractic adjustments may contribute to the overall care program of a patient suffering from diabetes.

A study published in the *Journal of Vertebral Subluxation Research* (JVSR; http://www.jvsr.com) focuses on the positive response of Chiropractic when combined with a typical treatment of diet and exercise.

Normalization of Blood and Urine Levels after Reduction of Vertebral Subluxations in a Patient Diagnosed with Diabetes Mellitus
Charles L. Blum, D.C. – *Journal of Vertebral Subluxation Research (JVSR)* [Dec. 7, 2006, pp. 1–6]

Introduction: Diabetes mellitus is a very serious condition that affects a wide spectrum of chiropractic patients.
Objectives: The case of a patient undergoing chiropractic vertebral adjustments, dietary modifications, and exercise for altered glucose levels due to diabetes mellitus.
Intervention: Treatment consisted of vertebral adjustments using the Sacro-Occipital technique, and chiropractic adjustments to the pancreas and adrenal glands (or CMRT).
Results: After one month of care, blood and urine glucose levels normalized and remained stable.
Conclusion: This study is very promising, but further research is needed to determine the percentage of patients with diabetes mellitus who may benefit from a combined program of chiropractic adjustments, dietary changes, and exercise.

"*This type of research is emerging everywhere*," says Matthew McCoy, Chiropractor and editor of the JVSR. "For over 100 years, chiropractors have maintained that what they do affects organ function and overall health. Research such as this demonstrates the urgency for more publicly or privately funded studies on Chiropractic and its effects beyond neck and back pain."

The potential of chiropractic to help people with diabetes is a very important issue. Between 1990 and 1999, the incidence of the disease increased by more than **40%**. In the year 2000, nearly **7% of the population** was affected. If nothing changes, the future looks grim. Approximately **1 in 3 men** and **2 in 5 women** born in 2000 will suffer from diabetes in their lifetime.

"*Given the devastating effects of diabetes on health and its economic implications, it is worth investigating other treatments such as chiropractic*," says Dr. Blum. "We must examine whether chiropractic can help improve the metabolism of these patients or perhaps improve the quality of life of those under medication. Further research is more than necessary."

Source: HYPERLINK "http://www.medicalnewstoday.com/articles/62500.php" http://www.medicalnewstoday.com/articles/62500.php

Ginseng Lowers Blood Glucose

Ginseng is a plant native to the mountains of East Asia. It has a general tonic effect and lowers blood glucose levels. The results of studies on the effect of ginseng on blood glucose are promising.

Scientists discovered a new and interesting possibility for the treatment of diabetes when they found that the popular herb **ginseng lowers blood glucose levels when used with meals.**

Although there is no conclusive medical evidence of its therapeutic effectiveness, the use of herbs in medicine has increased considerably. Ginseng, one of the most popular herbs over time, has come to be considered potentially useful in controlling blood glucose in diabetic patients.

To test this hypothesis, researchers at **St. Michael's Hospital in Toronto, Ontario, Canada,** studied the effects of American ginseng (*Panax quinquefolius*) in patients with type 2 diabetes and in non-diabetic individuals. The study was conducted by **Dr. Vladimir Vuksan,** and the results were published in the *Archives of Internal Medicine.*

The study included **10 non-diabetic adults** and **9 adults with type 2 diabetes.** Each participant received a 3 g dose of ginseng, 40 minutes before an oral glucose tolerance test with 25 g of glucose, and repeated the dose during the glucose intake. On other occasions, participants received a placebo before and during glucose intake. After ingestion, blood glucose was measured every 15 to 30 minutes for up to 2 hours.

The results were different between diabetic and non-diabetic participants. Among non-diabetics, no differences in blood glucose were observed between ginseng and placebo **when ginseng was taken with meals**; however, when ginseng was taken 40 minutes before meals, it led to a decrease in blood glucose levels.

In patients with type 2 diabetes, there was approximately a **20% reduction in blood glucose,** whether ginseng was taken before or during glucose intake.

The results do not suggest that people should simply use ginseng on their own to prevent diabetes, as further research is needed before this finding can be relied upon.

In all cases, we recommend consulting your doctor, therapist, or another qualified health professional. The information contained in this article is for informational purposes only.

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